

ABSTRACT

In a method of producing a high-pressure gas in an air separation unit, all the air intended for distillation is compressed in a compressor (1), the compressed air is purified, at least a first portion of the air is supercharged to a high pressure, the compressed and purified air is sent into a heat exchange line (6) of the unit where it cools, the compressed, purified and cooled air is separated in a system of columns of the unit comprising at least one distillation column (8, 9), a fluid (16) is withdrawn in the liquid state from one column of the system of columns, the said fluid is brought in the liquid state to the high pressure, it is vaporized by heat exchange with the air and the vaporized liquid at this high pressure is warmed in the heat exchange line of the installation, at least one portion of the supercharged air is expanded in an expansion turbine (4) from the high pressure to a second pressure, the expanded air then being sent into one column of the system of columns and during start-up of the air separation unit, and/or in order to regulate the inlet temperature of the turbine and/or during a change of operation, the air supercharged to the high pressure is sent upstream of the expansion turbine without passing through the exchange line.

- Figure 1 -